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LETTER

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Response: Implantation/explantation of sEEG electrodes and takotsubo syndrome: Plausible merits of additions to the protocol

To the Editor,

We are grateful for Dr Madias's interest in our preliminary report of takotsubo stress cardiomyopathy (TTS) occurring soon after explantation of stereoelectroencephalogram (sEEG) electrodes.[1] We note the additional recommendations made regarding alterations to protocols for both implantation and explantation of sEEG electrodes, including continuous electrocardiogram (ECG) monitoring, use of filtered signals >500 Hz from the ECG as a marker of peripheral autonomic sympathetic nervous system activity, and rapid access to specialist advice from a cardiologist if TTS is suspected.

In principle, we agree that ECG monitoring and rapid access to both acute medical and specialist cardiology services should be available to all patients undergoing sEEG, and it was to raise awareness of the possibility of the complication of TTS that we published the case report. However, we would hesitate to suggest that TTS should be the first consideration in a patient with symptoms suggestive of an acute cardiac syndrome undergoing a medical procedure when other causes would be more likely than this rare syndrome. Indeed, TTS remains a diagnosis based on exclusion of other (more common) pathology, typically requiring coronary angiography as a first-line investigation alongside echocardiography,[2] and while use of filtered signals >500 Hz from the ECG as a marker of autonomic sympathetic nervous system activity is interesting for research,[3] it would not be considered routine clinical practice or inform the differential diagnosis of acute coronary syndromes.

A minimum of single-lead ECG recording is routinely acquired during sEEG and detection of any relevant symptoms or ECG abnormality should prompt rapid acquisition of a 12-lead ECG. Although we appreciate that filtering of ECG signal to estimate stellate ganglion nerve activity could inform regarding the pathophysiology of TTS,[3] it may distract physicians from the immediate priorities of treating flash pulmonary edema and excluding intracranial hemorrhage. Overall however, we agree that implantation and explantation of sEEG electrodes should only be performed in those centers with rapid access to acute medical and cardiology support.

ETHICAL PUBLICATION STATEMENT

We confirm that we have read the Journal's position of issues involved in ethical publication and affirm that this report is consistent with those guidelines.

CONFLICT OF INTEREST

None of the authors has any conflict of interest to declare.

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REFERENCES

1. Sarkar P, Graby J, Walker P, Osman L, Bradley M, Likeman M, et al Takotsubo stress cardiomyopathy syndrome following explantation of sEEG electrodes. Epilepsia Open. 2021;6(1):239–43. https://doi.org/10.1002/epi4.12452
2. Ghadri JR, Wittstein IS, Prasad A, Sharkey S, Dote K, Akashi YJ, et al International expert consensus document on Takotsubo syndrome (Part I): clinical characteristics, diagnostic criteria, and pathophysiology. Eur Heart J. 2018;7(39):2032–46.
3. Madias JE. A proposal for a noninvasive monitoring of sympathetic nerve activity in patients with Takotsubo syndrome. Med. Hypotheses. 2017;109:97–101.